

Compass and Straightedge Construction of Copying an Angle

The material in this document is adapted from *PlanetMath*.

In all of the pictures supplied, the angle in red is the one that is to be copied.

One can copy an angle using compass and straightedge as follows:

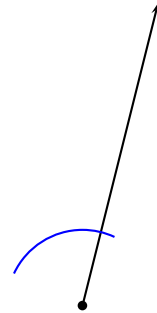
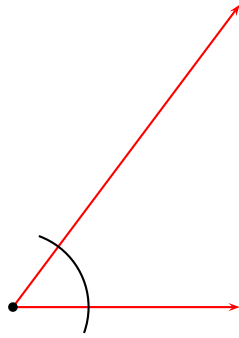
- (1) Draw one of the rays of the new angle.



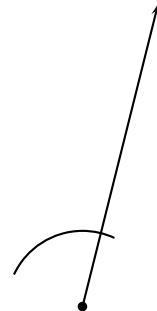
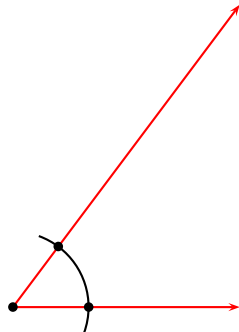
- (2) With one point of the compass at the vertex of the given angle, draw an arc that intersects both of its rays.



- (3) With one point of the compass at the point where the vertex of the new angle is supposed to be, draw an arc that intersects the ray of the new angle and extends far from the ray in one direction. The compass needs to be open the same amount as it was in the previous step.



- (4) Use the compass to measure the distance between the two points of intersection of the given angle and its arc. This length needs to be used in the next step.



- (5) With one point on the intersection of the ray of the new angle and its arc, draw an arc so that it intersects the other arc that was drawn for the new angle.



- (6) Draw the ray from the vertex of the angle to the intersection of the two arcs.

